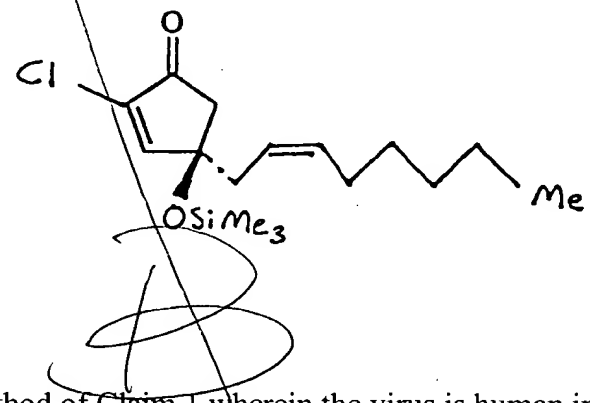
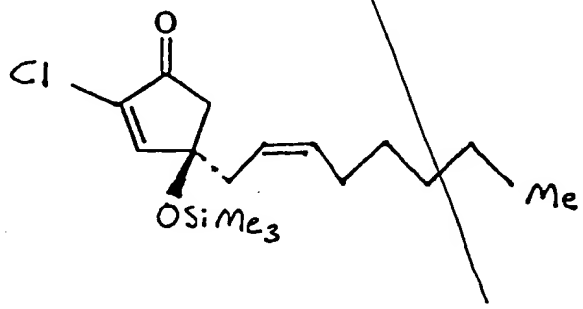
WHAT IS CLAIMED:

1. A method of treating or preventing virus replication and related disorders in an animal comprising administering to the animal in which such treatment or prevention is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure wherein the compound is not PGD_2, PGA_2 15-deoxy-13,14-dihydroprostaglandin J_2, Δ^{12}-13, 14-dihydro-PGD_2 or the compound depicted below.

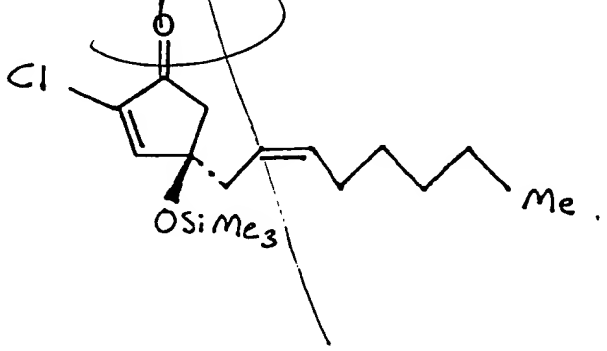


2. The method of Claim 1 wherein the virus is human immunodeficiency virus, influenza, herpesvirus, hepatitis B virus or hepatitis C virus.

3. A method of treating or preventing inflammation and related disorders in an animal comprising administering to the animal in which such treatment or prevention is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure, wherein the compound is not PGD_2, PGA_2 15-deoxy-13,14-dihydroprostaglandin J_2, Δ^{12}-13, 14-dihydro-PGD_2, or the compound depicted below.



4. A method of treating or preventing cancer and related disorders in an animal comprising administering to the animal in which such treatment or prevention is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure, wherein the compound is not PGD_2, PGA_2, 15-deoxy-13,14-dihydroprostaglandin J_2, Δ^{12}-13, 14-dihydro-PGD_2 or the compound depicted below.



5. A method of inducing cytoprotective responses in a human, comprising administering to a human in which such treatment is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure that induces the expression of one or more heat shock proteins.

6. A method of inhibiting NF-κB activation in a human, comprising administering to a human in which such treatment is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure that downregulates or inhibits NF-κB activity.

7. A method of inducing both cytoprotective and NF-κB inhibitory activities in a human comprising administering to a human in which such treatment is desired a therapeutically effective amount of a compound with a cyclopentenone ring structure that induces the expression of one or more heat shock proteins and downregulates or inhibits NF-κB activity.

8. The method of Claim 1, 3, 4, 5, 6 or 7 wherein the compound is PGJ_2, 15-deoxy $\Delta^{12,12}$-PGJ_2 or PGA_1.

9. The method of Claim 5, 6 or 7 wherein the compound is PGA_1, PGA_2, PGA_2, 16,16-dimethyl-PGA_2, PGD_2, 9-deoxy-Δ^9,Δ^{12}-13,14-dihydro-PGD_2 (Δ^{12}-PGJ_2), PGJ_2, 15-deoxy Δ^{12-14}-PGJ_2 or 2-cyclopenten-1-one.

10. A method of inducing both cytoprotective and NF-κB inhibitory activities in a human comprising administering to a human in which such treatment or prevention is desired a therapeutically effective amount of a compound which is a serine protease inhibitor that induces the expression of one or more heat shock proteins and downregulates or inhibits NF-κB activation.

11. The method of Claim 10 wherein the serine protease inhibitor is 3,4-dichloro-iso-coumarine (DCIC), tosyl-L-phenylalanine-chloromethylketone (TPCK), N_{α}-tosyl-lysine-chloromethylketone (TLCK), N-acetyl-DL-phenylalanine-β-napthylester (APNE), N-benzoyl-L-thyroxine-ethylester (BTEE) or their derivatives.

12. The method of Claim 5, 7 or 10 wherein at least one of the heat shock proteins induced is HSP70.

13. The method of Claim 5, 6, 7 or 10 wherein the human has an infectious disease.

14. The method of Claim 5, 6, 7 or 10 wherein the human has an immune disorder.

15. The method of Claim 5, 6, 7 or 10 wherein the human has cancer.

16. The method of Claim 5, 6, 7 or 10 wherein the human has an inflammatory disorder.

17. The method of Claim 5, 6, 7 or 10 wherein the human has an HIV infection, an influenza virus infection, a herpesvirus infection, a hepatitis B virus infection or a hepatitis C virus infection.

18. A method of treating or preventing a viral infection in an animal in need thereof comprising:

(a) identifying a compound that induces the expression of one or more heat shock proteins and downregulates or inhibits NF-κB activation; and

(b) administering the compound to the animal.

19. A method of treating or preventing inflammation and related disorders in an animal in need thereof comprising:

(a) identifying a compound that induces the expression of one or more heat shock proteins and downregulates or inhibits NF-κB activation; and

(b) administering the compound to the animal.

20. A method of treating or preventing cancer and related disorders in an animal in need thereof comprising:

(a) identifying a compound that induces the expression of one or more heat shock proteins and downregulates or inhibits NF-κB activation; and

(b) administering the compound to the animal.

~~21. The method of Claims 18, 19 or 20 wherein the animal is human.~~

add A12

add B1